

Centre Number						Candidate Number				
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For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
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TOTAL	



General Certificate of Secondary Education
June 2015

Information and Communication Technology (Short Course)

45204

Unit 1 Systems and Applications in ICT

Wednesday 13 May 2015 9.00 am to 10.00 am

You will need no other materials.
You may use a calculator.

Time allowed

- 1 hour

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **eight** questions in total.
- Answer **all** questions in Sections A and B. In Section C answer **either** Question 8 **or** Question 9, which should be answered in continuous prose. In this question you will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.



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Section A

Answer **all** questions in the spaces provided.

1 For parts **(a)** to **(f)**, write the letter for your answer in the box given.

1 (a) Which **one** of the following is an input device?

- A** Flash memory
- B** Inkjet printer
- C** Microphone
- D** Monitor

[1 mark]

Answer

1 (b) Which **one** of the following is an output device?

- A** Dial-up modem
- B** Digital projector
- C** DVD-ROM
- D** Graphics tablet

[1 mark]

Answer

1 (c) Which **one** of the following is a storage medium?

- A** Hard disk
- B** Keyboard
- C** Scanner
- D** SMS

[1 mark]

Answer



1 (d) Which **one** of the following best describes the scrambling of data so that it appears meaningless until unscrambled using a key?

- A** Encryption
- B** Image/code recognition
- C** Security question
- D** Selective drop-down menu

[1 mark]

Answer

1 (e) For which **one** of the following is an Internet user most likely to use a forum?

- A** Discuss a topic that interests them
- B** Make a telephone call
- C** Send a fax
- D** Use route guidance

[1 mark]

Answer

1 (f) Which **one** of the following is a common feature of presentation software?

- A** Cookie
- B** Search criteria
- C** Timing
- D** Use a formula

[1 mark]

Answer

6

Turn over for the next question

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2 (a) Write the commands that will move the robot safely by **following** the path from **Square A** to **Square B**. Nomad is currently facing in the correct direction. Refer to **Table 1** and **Figure 1**.

[3 marks]

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2 (b) Explain why commands must be accurate when controlling devices such as robots.

[2 marks]

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3 (a) People can use graphics software packages to create images.

3 (a) (i) Tick **one** box to show which feature would be best to remove sections drawn by mistake.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	

3 (a) (ii) Tick **one** box to show which feature would be best to produce the effect of one picture transforming into another picture.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	

3 (a) (iii) Tick **one** box to show which feature would be best to turn an image clockwise or anti-clockwise.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	



3 (a) (iv) Tick **one** box to show which feature would be best to put images on top of each other on the same document.

[1 mark]

	Tick one box only
Erasing	
Layering	
Morphing	
Repeating	
Rotating	
Shading	

3 (b) Describe what the term 'airbrushing' means when manipulating the look of photographic images.

[2 marks]

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4 Many students use the Internet to gather data when completing school projects.

4 (a) Tick **one** box that shows the most sensible way to check information on a website is accurate.

[1 mark]

	Tick one box only
Access only older websites	
Compare with other reliable sources	
Install a firewall	
Use a search engine	

4 (b) Organisations use data validation to reduce data entry errors. Give a suitable reason why data validation cannot be relied on to prevent all errors.

[1 mark]

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4 (c) A mobile phone shop uses the data validation method shown below, to ensure only valid options are entered in the Phone Colour field of their products database.

The image shows a dropdown menu for 'Phone Colour'. The menu is open, showing three options: 'White', 'Black', and 'Silver'. The 'White' option is currently selected and highlighted in black with white text. To the left of the dropdown is a small orange box with a white asterisk (*), and to the right is a small blue box with a white 'v'.

Tick **one** box that shows the name of the type of data validation shown above.

[1 mark]

	Tick one box only
Check digit	
Look-up list	
Presence check	
Range check	



4 (d) (i) Name **one** method of data verification.

[1 mark]

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4 (d) (ii) Describe how the method of data verification given in your answer above could be used to improve the accuracy of data.

[2 marks]

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4 (e) Tick **one** box that best describes a method of inserting the contents of database fields onto a membership card.

[1 mark]

	Tick one box only
Mail merge	
Mail protection	
Mail range	
Mail service	

4 (f) Some organisations are concerned about the effect that replacing computer equipment can have on the environment.

Give **two** alternative approaches that organisations can take to minimise the harmful effects of throwing away older computer equipment that ends up in land fill sites.

[2 marks]

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5 (a) The list below shows a range of equipment used in ICT. For each part of this question, give the device that **best** matches the definition given.

- | | |
|---------------------------------|-----------------------|
| A Buzzer | F RFID reader |
| B Dongle | G Video camera |
| C File server | H VoIP |
| D Interactive whiteboard | I Web cam |
| E Joystick | |

Choose your answers from the **list given above**. Write the letter for your answer in the box given.

5 (a) (i) A method of using the internet to make digitised voice telephone calls.

[1 mark]

Answer

5 (a) (ii) A device that gathers information from radio signals sent by a tag.

[1 mark]

Answer

5 (a) (iii) A computer that is connected to a network and manages the storage of data.

[1 mark]

Answer

5 (b) Give **one disadvantage** to people working in organisations of using mobile communication networks such as 4G.

[1 mark]

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Section B

Answer **all** questions in the space provided.

- 6** A charity runs a home for abandoned cats. The charity has carried out a number of collections to raise money in different locations around the town. Collections are carried out by four teams of people, called Red, Blue, Green and Yellow. The charity uses a spreadsheet to calculate the amount of money raised by the four teams and to calculate the Grand Total.

	A	B	C	D	E	F	G	H	I	J
1	Cats Home Collection									
2	Team	Supermarket	High Street	School and College	Football Stadium	Lowest Amount Collected	Highest Amount Collected	Average	Team Percentage	Team Total
3	Red	£174.00	£43.00	£123.00	£204.00	£43.00	£204.00	£136.00	23.7	£544.00
4	Blue	£102.00	£53.00	£158.00	£181.00	£53.00	£181.00	£123.50	21.5	£494.00
5	Green	£155.00	£57.00	£136.00	£325.00	£57.00	£325.00	£168.25	29.3	£673.00
6	Yellow	£78.00	£82.00	£111.00	£312.00	£78.00	£312.00	£145.75	25.4	£583.00
7										
8									Grand Total	£2,294.00

- 6 (a)** Tick **one** box to show the function that calculates the highest amount collected by each team.

[1 mark]

	Tick one box only
Average	
If	
Max	
Min	

- 6 (b) (i)** Give the formula that has been used to calculate the team total for the Red team.

[1 mark]

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6 (b) (ii) The percentage for the Red team was calculated using the formula $=J3/\$J\$8*100$. Describe why an absolute cell reference is used.

[2 marks]

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6 (c) The charity wants to gather data from people in the town. Describe the advantages and disadvantages of using an online form, rather than a paper-based questionnaire to capture this data.

[5 marks]

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7 A wiki is a collaborative way of gathering and presenting information. Sometimes, wikis are thought to include inaccurate information.

7 (a) Tick **two** boxes which show sensible measures that wiki administrators can use to help maintain the accuracy of information.

[2 marks]

	Tick two boxes only
Allow users to report any inaccurate information they see	
Encrypt the information displayed on the wiki	
Keep a record of changes made and the names of the users who changed a wiki entry	
Not allow any users to make changes to wiki entries	
Use a firewall to protect the wiki servers	

7 (b) Ellen Wey is a school student who uses a blog to advertise monthly music concerts she is organising to raise money for charity.

Give **two advantages** to Ellen of using the blog to publicise the charity music concerts compared with using posters.

[2 marks]

Advantage 1

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Advantage 2

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7 (c) Ellen Wey’s teacher wants to create a new information system to store examination results. Describe, using examples, the difference between normal and extreme data when testing a computer system.

[5 marks]

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Section C

You should answer **either** Question 8 **or** Question 9, but **not** both.

You will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.

Either

8 Discuss the ways people can behave responsibly and stay safe online when using ICT-based communication.

[12 marks]

This space is available for planning your answer, if you wish to use it.

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or

9 Discuss ways of preventing unauthorised access to computer systems.

[12 marks]

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